# 4. Alignment and Adjustments

## 4-1 General Alignment Instructions

1. Usually, a color TV-VCR needs only slight touch-up adjustment upon installation. Check the basic characteristics such as height, horizontal and vertical sync and focus.

2. Observe the picture for good black and white details. There should be objectionable color shading; if color shading is present, demagnetize, perform purity and convergence adjustments described below.

3. Use the specified test equipment or its equivalent.

4. Correct impedance matching is essential.

5. Avoid overload. Excessive signal from a sweep generator might overload the front-end of the TV. When inserting signal markers, do not allow the marker generator to distort test results.

6. Connect the TV only to an AC power source with voltage and frequency as specified on the backcover nameplate.

7. Do not attempt to connect or disconnect any wires while the TV is turned on. Make sure that the power cord is disconnected before replacing any parts.

8. To protect against shock hazard, use an isolation transformer.

## 4-2 Automatic Degaussing

A degaussing coil is mounted around the picture tube, so that external degaussing after moving the TV should be unnecessary. But the receiver must be properly degaussed upon installation.

The degaussing coil operates for about 1 second after the power is switched ON. If the set is moved or turned in a different direction, the power should be OFF for at least 10 minutes.

If the chassis or parts of the cabinet become magnetized, poor color purity will result. If this happens, use an external degaussing coil. Slowly move the degaussing coil around the faceplate of the picture tube and the sides and front of the receiver. Slowly withdraw the coil to a distance of about 6 feet before turning power OFF.

If color shading persists, perform the following Color purity and Convergence adjustments.

## 4-3 High Voltage Check

**CAUTION : There is no high voltage adjustment on this chassis. The B+ power supply should be +135 volts (with full color- bar input and normal picture level).**

1. Connect a digital voltmeter to the second anode of the picture tube.

2. Turn on the TV. Set the Brightness and Contrast controls to minimum (zero beam current).

3. Adjust the Brightness and contrast controls to both extremes. Ensure that the high voltage does not exceed 30 KV under any conditions.

## 4-4 FOCUS Adjustment

1. Input a black and white signal.
2. Adjust the tuning control for the clearest picture.
3. Adjust the FOCUS control for well defined scanning lines in the center area of the screen.

## 4-5 SCREEN Adjustment

1. Input Toshiba Pattern
2. Enter “Service Mode”.(Refer to “4-8-1 Service Mode”)
3. Select “G2-Adjust”.
4. Set the values as below.

**Table 1. Screen Adjustment Table**

| No | INCH / CRT | IBRM | | WDRV | | CDL | | COLR G B (Smallesz Value) | | REGION |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 6101 | 5109 | **6101** | **5109** | **6101** | **5109** | **6101** | **5109** | |
| 1 | 14” / SDI | 205 | 205 | 35 | 35 | 100 | 100 | 100 | 100 | Noraml |
| 2 | 15PF / SDI | 220 | 225 | 35 | 35 | 200 | 160 | 65 | 100 | |
| | | 215 | 215 | 35 | 35 | 100 | 100 | 100 | 100 | CIS |
| 3 | 21” 1.7R / SDI | 220 | 215 | 35 | 45 | 230 | 160 | 65 | 80 | Noraml |
| 4 | 21” 1.7R / JCT | 220 | 220 | 35 | 35 | 200 | 200 | 150 | 150 | |
| 5 | 21PF / TSB | 220 | 225 | 35 | 45 | 230 | 185 | 65 | 75 | |
| 6 | 21PF / LG | 230 | 225 | 35 | 45 | 230 | 175 | 65 | 165 | |
| 7 | 21PF / SDI | 220 | 220 | 35 | 35 | 230 | 200 | 65 | 145 | |
| 8 | 25PF / SDI | 210 | 205 | 35 | 45 | 150 | 150 | 65 | 140 | |
| 9 | 29” 1.3R / SDI | 220 | 200 | 35 | 45 | 180 | 180 | 65 | 150 | |
| 10 | 25” 1.3R/SDI | 220 | 210 | 35 | 35 | 230 | 220 | 65 | 130 | |
| 11 | 30” | 210 | 200 | 35 | 45 | 160 | 180 | 100 | 130 | |

5. Turn the SCREEN VR until “MRCR G B” and “MRWDG” are green and those value are about 100. (The incorrect SCREEN Voltage may result that “MRCR G B” and “MRWDG” should be red)

## 4-6 E²PROM (IC902) Replacement

1. When IC902 is replaced, all adjustment data revert to the initial values.
   So, all adjustment values when servicing should be readjusted.
2. After IC902 is replaced, connect the AC power supply cord.
3. Turn the power switch ON.
4. In stand-by, warm up the TV for at least 10 seconds.
5. Power on the TV.

## 4-7 White Balance Adjustment

■ Equipment : Color-Analyzer (CA-100)
■ Input Signal : Pattern signal (Toshiba pattern)

1. Select STANDARD from the menu.
2. Input an 100% White pattern.
3. Enter the “Service Mode”. (Refer to “4-8 Service Mode”)
4. Warm up the TV set at least for 30 minutes.
5. Input a Toshiba pattern signal.
6. Enter the “Video Adjust1”. (Refer to table 2.)
   - Adjust “Sub Contrast” so that Y (luminance) becomes 65 ft ± 3.
   - Use “Red Drive” and “ Blue Drive” to adjust High-Light (x : 265, y : 265)
   - Adjust “Sub Bright” so that Y (luminance) becomes 1.2ft ± 0.3.
   - Use “Red Cutoff” and “Blue Cutoff” to adjust Low-Light (x : 265, y : 265).
7. Adjust CA-100 so that the final adjustment value can be fixed.
8. Use the Channel Up / Down (▲ / ▼) buttons to move the cursor on the adjustment modes.
9. Use the Volume + / - buttons to change the adjustment value.

**Table 2. White Balance Table**

| Area | Inch | High | | | Low | | |
|---|---|---|---|---|---|---|---|
| | | X | Y | Luminance (ft) | X | Y | Luminance (ft) |
| East South Asia | 15PF | 265 | 265 | 85 | 265 | 265 | 1.8 |
| | 21″ 1.7R | 265 | 265 | 50 | 265 | 265 | 1.2 |
| | 21PF | 265 | 265 | 60 | 265 | 265 | 1.0 |
| | 25″1.3R | 265 | 265 | 45 | 265 | 265 | 1.0 |
| | 25PF | 265 | 265 | 40 | 265 | 265 | 1.2 |
| | 29″1.3R | 265 | 265 | 35 | 265 | 265 | 1.0 |
| | 30″ | 265 | 265 | 35 | 265 | 265 | 1.0 |
| Middle East Asia & Africa | 14″ | 290 | 300 | 55 | 290 | 300 | 1.8 |
| | 15PF | 290 | 300 | 85 | 290 | 300 | 1.8 |
| | 21″ 1.7R | 290 | 300 | 50 | 290 | 300 | 1.2 |
| | 21PF | 290 | 300 | 60 | 290 | 300 | 1.0 |
| | 25″ 1.3R | 290 | 300 | 45 | 290 | 300 | 1.0 |
| | 25PF | 290 | 300 | 40 | 290 | 300 | 1.2 |
| | 29″1.3R | 290 | 300 | 35 | 290 | 300 | 1.0 |
| | 30″ | 290 | 300 | 35 | 290 | 300 | 1.0 |
| CIS | 15PF | 272 | 270 | 50 | 265 | 266 | 2.2 |
| | 21PF | 272 | 270 | 50 | 265 | 266 | 2.0 |
| | 25″ 1.3R | 272 | 270 | 40 | 265 | 266 | 2.2 |
| | 25PF | 272 | 270 | 30 | 265 | 266 | 2.2 |
| | 29″ 1.3R | 272 | 270 | 30 | 265 | 266 | 2.2 |
| Australia | 15PF | 292 | 307 | 85 | 301 | 311 | 1.8 |
| | 21PF | 292 | 307 | 60 | 301 | 311 | 1.0 |
| | 25″ 1.3R | 292 | 307 | 45 | 301 | 311 | 1.0 |
| | 25PF | 292 | 307 | 40 | 301 | 311 | 1.2 |
| | 29″ 1.3R | 292 | 307 | 35 | 301 | 311 | 1.0 |

# 4-8 Factory Adjustment

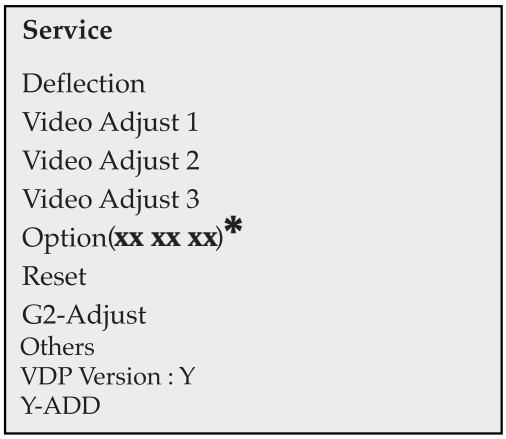
## 4-8-1 Service Mode

1. To enter the "Service Mode", Press the remote-control keys in this sequence :

   - If you do not have Factory remote-control

   - If you have Factory remote-control

2. After the Service Mode is entered, the initial screen is as shown in the figure below.




✱ These hexa digits are check sum value which depends on the MICOM version.
If check sum value is changed, the value of $E^2$PROM Data newly initialed.

3. Use the Channel Up / Down buttons to move the cursor in the adjustment parameters.

   ***Note :***

   - When CRT, CRT PCB, FBT, $E^2$PROM (sometimes MICOM) is replaced, the adjustment values should be controlled.

   - After the Service adjustment is completed, Do not select "Reset" in the service mode menu. (After above procedure is done, power is on initially and the "Plug and Play" will be operated.)

| Area | Micom Version | Excluded Model | Main Problems & History of Corrections |
|---|---|---|---|
| EUROPE | SIM-806EW (KS2A/KS3A) | MSP3410 94 58 VERSION | At the current mass production (MP), MASK is applying to ks2a/ks3a chassis |
| | SIM-806EW1 (KS2A/KS3A) | | 1. Improvement of Secam-L Sound Noise when using MSP3410 94 58 VERSION<br>2. Improvement of repetition of SECAM-L in AUTO SEARCH<br>3. Improvement of the gap between SCART RGB and CVBS image centers .(Added to RGB SHIFT FACTORY)<br>4. Correction of Greek OSD<br>5. Fixation of Zoom Mode Offset Changed in order to adjust in Service mode. Application of REMASK via an improvement in picture quality |
| | SIM-806EW2 | | Application of REMASK via an improvement in picture quality |
| | OIM-806EW (KS2A/KS3A) | | TOSHIBA OEM MODEL ONLY MICOM (Applied to SEH MP) |
| Middle East Asia & Africa & CIS | SIM-806MA (KS2A) | CONTROL 6KEY,PIP MODEL, All 22-Q models | MTP is used for all models (excluding KS2A 22Q) |
| | SIM-806MA1 (KS2A/KS3A) | | MTP used for KS2A 22Q models<br>1. VM related items (Delay1,Gain1,Limit,Delay,Coring) Adjust3)<br>2. Addition of PIP VSPDEL to FACTORY items<br>3. No color when PIP NTSC 4.43 is received<br>4. NICAM POP NOISE<br>5.Av by channel key added<br>6.When English is used for the language of Libia models, the Libian must be added and PROGRAM_OSD box must be reduces(Libian Only)<br>7. RGB SHIFT/HB START/HB STOP added<br>8. Countermeasure on RADIATION (Option: Pin49 output software)<br>9. In NTSC system, a transient phenomenon happens during the channel |
| | SIM-806MA2 (KS2A/KS3A) | Decided to apply MASK (June 2001) | Correction of Libian about child lock |
| | SIM-806MA3 (KS2A/KS3A) | | 1. Improvement of SECAM/PAL Color Hysteresis characteristics<br>2. Correction of instantaneous LNA error |
| East South Asia & Australia | SIM-806EA (KS2A) | Thailand,Vietnam, PIP MODEL,6-KEY,CONTROL | |
| | SIM-806EAY (KS2A) | | MTP used for KS2A<br>1. Correction of Thailand/Vietnam OSD problems ("Not available", "S-Video") |
| | SIM-806EA1 (KS2A/KS3A) | | 1. Change of Indonesia sports string<br>2. Addtion of VM related items (Delay1,Gain1,Limit,Delay,Coring) to Adjust3<br>3. Addition of PIP VSPDEL to FACTORY items<br>4. Improvement of No Color when PIP NTSC 4.43 is received<br>5. Improvement of NICAM POP NOISE<br>6. Addition of AV by channel key service<br>7. Addition of RGB SHIFT/HB START/HB STOP<br>8. Addition of countermeasure on RADIATION (Option: pin49 output software)<br>9. Transient phenomena when switching CH in NTSC system<br>10. In Temperature Low test, the color of SECAM CH' late follows |

| Area | Micom Version | Excluded Model | Main Problems & History of Corrections |
|---|---|---|---|
| East South Asia & Australia | SIM-806EA1 (KS2A/KS3A) | Checking the improvement in quality: Vietnam/Thailand 28.Dec.2000 | |
| China | SIM-806C (KS2A/KS3A) | | Same with MTP (developed in 22 Sep. 2000) |
| | SIM-806C1 (KS2A/KS3A) | | 1. Improvement of color noise in LOW BURST<br>2. A sound saw filter switching error happens when changing Manual Color System<br>(For a PAL channel, when switching NTSC3.58 into Auto)<br>3. Addition of PIP VSPDEL to FACTORY items<br>4. Improvement of No Color when PIP NTSC 4.43 is received<br>5. Addition of RGB SHIFT/HB START/HB STOP<br>6. Addition of countermeasure on RADIATION (Option: pin 49 output software)<br>7. Transient phenomena happens when switching CH' in NTSC system |
| India | SIM-806EI (KS2A/KS3A) | | Same with MTP (developed in 6 Sep. 2000) |
| | SIM-806EI1 (KS2A/KS3A) | | 1. Addition of PIP VSPDEL to FACTORY items<br>2. Improvement of No Color when PIP NTSC 4.43 is received<br>3. Addtion of RGB SHIFT/HB START/HB STOP<br>4. Addition of countermeasure on RADIATION (Option: pin49 output software)<br>5. Transient phenomena happens when switching CH' in NTSC system<br>6. In Temperature Low test, the color of SECAM CH' late follows.<br>7. Addition of woofer to FACTORY items<br>8. Change of the value of equalizer (Factory Woofer in EQ ON) |

## 4-8-2 Deflection (Memory Data)

4-8-2(A) GEOMETRIC ADJUSTMENT VALUE BY MODEL

| OSD | RANGE | INITIAL DATA | | | | |
|---|---|---|---|---|---|---|
| | | TSB 21-FLAT | LG-CPT 21-FLAT | SDI 21" FALT | SDI 14" | SDI 15" FLA |
| | | A51LSH196X03(+380)<br>A51LSH198X03(-250) | A51QDJ279X14 | A51QDX991X001 | A34KQV42X | A36QDT351X |
| V SHIFT | -128~127 | -40 | -40 | -40 | -20 | -18 |
| V AMP | -128~127 | 20 | 20 | -15 | -40 | 18 |
| V SLOPE | -128~127 | 0 | -5 | 0 | -5 | -4 |
| V SC | -128~127 | -13 | -6 | -13 | 0 | -17 |
| H EW | -128~127 | 50 | -30 | 20 | 61 | 24 |
| H TRAPEZIUM | -128~127 | 20 | 20 | -40 | -8 | 20 |
| H PARABOLA | -128~127 | 15 | 15 | 20 | -3 | 17 |
| H SYMMETRY | -128~127 | 13 | 13 | 13 | 12 | 5 |
| H CORNER | -128~127 | 40 | 40 | 40 | -32 | 69 |
| H SHIFT | -128~127 | 0 | 0 | 0 | 0 | 0 |
| PIP CONTRAST | 0~15 | 7 | 15 | 7 | 7 | 7 |
| PIP TINT | 0~63 | 0 | 0 | 0 | 0 | 0 |
| PIP VSPDEL | 0~32 | 0 | 8 | 8 | 0 | 0 |
| PIP PAL V. POS | 0~255 | 33 | 33 | 33 | 33 | 33 |
| PIP NTSC V. POS | 0~255 | 33 | 33 | 33 | 33 | 33 |
| PIP H. POS | 0~255 | 45 | 45 | 45 | 45 | 45 |
| PIP BLKLG | 0~15 | 6 | 6 | 6 | 6 | 6 |

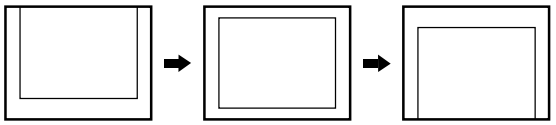
| OSD | RANGE | INITIAL DATA | | | | |
|---|---|---|---|---|---|---|
| | | SDI 21"1.7R | SDI 25" 1.3R | SDI 25" FLAT | SDI 29" 1.3R | SDI 30" |
| | | A51KQJ63X01 | A59KPR84X01 | A59QDF891X002 | A68QBT891X002<br>A68KVL74X01 | A70QBZ791X001 |
| V SHIFT | -128~127 | -40 | -50 | -50 | -50 | -40 |
| V AMP | -128~127 | 5 | -10 | -15 | -20 | -48 |
| V SLOPE | -128~127 | -2 | 0 | 0 | 0 | -2 |
| V SC | -128~127 | -7 | -6 | -13 | 0 | 0 |
| H EW | -128~127 | 64 | 10 | 10 | -55 | 20 |
| H TRAPEZIUM | -128~127 | -20 | -50 | -10 | -40 | -80 |
| H PARABOLA | -128~127 | -13 | -40 | -60 | -60 | -75 |
| H SYMMETRY | -128~127 | 13 | 13 | 13 | 13 | 13 |
| H CORNER | -128~127 | 15 | 40 | 69 | 70 | 60 |
| H SHIFT | -128~127 | 0 | 0 | 0 | 0 | -2 |
| PIP CONTRAST | 0~15 | 7 | 7 | 7 | 7 | 7 |
| PIP TINT | 0~63 | 0 | 0 | 0 | 0 | 0 |
| PIP VSPDEL | 0~32 | 0 | 0 | 8 | 0 | 14 |
| PIP PAL V. POS | 0~255 | 33 | 33 | 33 | 33 | 33 |
| PIP NTSC V. POS | 0~255 | 33 | 33 | 33 | 33 | 33 |
| PIP H. POS | 0~255 | 45 | 45 | 45 | 45 | 45 |
| PIP BLKLG | 0~15 | 6 | 6 | 6 | 6 | 6 |

## 4-8-2(B) GEOMETRIC ADJUSTMENT

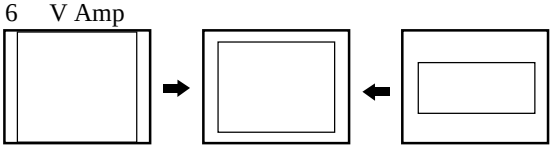
| OSD | RANGE | FUNCTION |
|---|---|---|
| V SHIFT | -128~127 | Adjusts Vertical picture position |
| V AMP | -128~127 | Adjusts Vertical picture size. Adjust 4:4 upper and below picture size in lion head pattern at factory |
| V SLOPE | -128~127 | Adjusts Vertical Slope Correction |
| V SC | -128~127 | Adjusts Vertical s-correction |
| H EW | -128~127 | Horizontal east west width. Adjust 5:5 left and right picture size in lion head pattern at factory. |
| H TRAPEZIUM | -128~127 | Adjusts horizontal Trapezium. |
| H PARABOLA | -128~127 | Adjusts Horizontal Parabola. |
| H SYMMETRY | -128~127 | Adjusts the top and bottom horizontal symmetry of picture. |
| H CORNER | -128~127 | Adjusts the top and bottom horizontal corner of picture.<br>Adjusts so that the top and bottom of H corner can be linear. |
| H SHIFT | -128~127 | Adjusts Horizontal Position. |
| PIP CONTRAST | 0~15 | Adjusts PIP contrast. |
| PIP TINT | 0~63 | Adjusts PIP Tint. When a NTSC signal is received, this PIP Tint adjusts color phase |
| PIP VSPDEL | 0~32 | PIP vertical sync pulse delay. When chaning data, PIP jitters at two points. In this case, the PIP VSPDEL is set to the center between two points. |
| PIP PAL V. POS | 0~255 | Adjust Vertical position the PIP of PAL system. |
| PIP NTSC V. POS | 0~255 | Adjust Vertical position the PIP of NTSC system. |
| PIP H. POS | 0~255 | Adjust Horizontal Position the PIP. |
| PIP BLKLG | 0~15 | Adjusts PIP blanking level green (PIP low light white balance). |

## 4-8-2(C) SCREEN CHANGE (I2C BUS GEOMETRIC ADJUSTMENT)

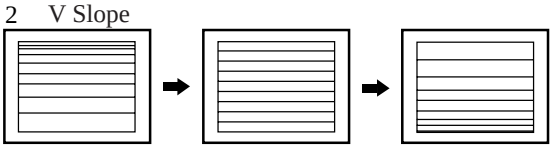
1 V Shift



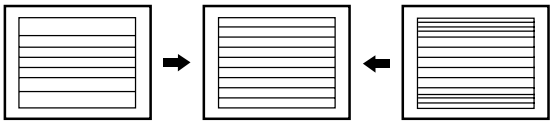
6 V Amp



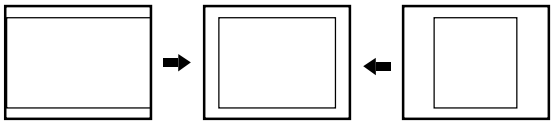
2 V Slope



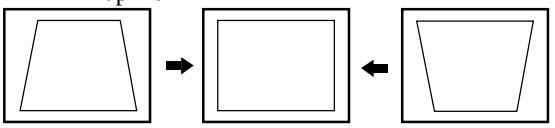
7 V SC



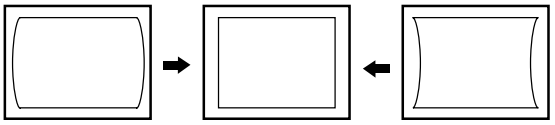
3 H EW



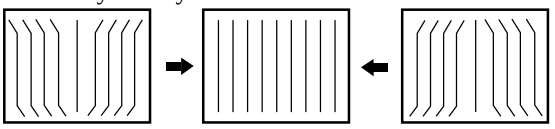
8 H Trapizium



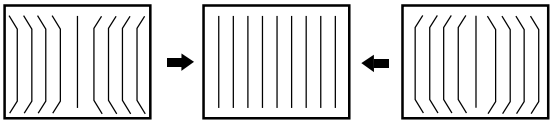
4 H Parabola



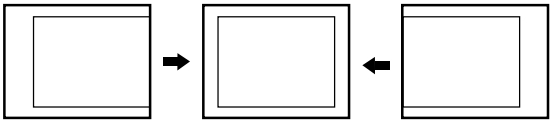
9 H Symmetry



5 H Corner



10 H Shift



4-8-2(D) VIDEO ADJUSTMENT 1

| VIDEO ADJUST1 | RANGE | INITIAL DATA | | | | |
|---|---|---|---|---|---|---|
| | | TSB 21-FLAT | LG-CPT 21-FLAT | SDI 21" FALT | SDI 14" | SDI 15" FLA |
| | | A51LSH196X03(+380)<br>A51LSH198X03(-250) | A51QDJ279X14 | A51QDX991X001 | A34KQV42X | A36QDT351X |
| RED CUTOFF | 0~255 | 127 | 127 | 127 | 127 | 127 |
| GREEN CUTOFF | 0~255 | 127 | 127 | 127 | 127 | 127 |
| BLUE CUTOFF | 0~255 | 127 | 127 | 127 | 127 | 127 |
| RED DRIVE | 0~255 | 127 | 127 | 127 | 127 | 127 |
| GREEN DRIVE | 0~255 | 127 | 127 | 127 | 127 | 127 |
| BLUE DRIVE | 0~255 | 127 | 127 | 127 | 127 | 127 |
| SUB BRIGHT | 0~200 | 100 | 100 | 100 | 100 | 100 |
| SUB CONTRAST | 0~63 | 52 | 52 | 52 | 52 | 52 |
| SUB COLOR | 0~27 | 27 | 27 | 27 | 27 | 27 |
| SUB TINT | 0~100 | 30 | 30 | 30 | 30 | 30 |
| BCL THRESHOLD | 0~255 | 62 | 54 | 62 | 30 | 35 |
| BCL GAIN | 0~15 | 9 | 8 | 8 | 8 | 8 |
| BCL TIME | 0~15 | 5 | 13 | 13 | 13 | 13 |
| TTX CONTRAST | 0~255 | 90 | 90 | 90 | 90 | 100 |
| P. BG YC DELAY | | 3 | 3 | 3 | 3 | 3 |
| P. DK YC DELAY | | 6 | 6 | 6 | 6 | 6 |
| P.I YC DELAY | | 6 | 6 | 6 | 6 | 6 |
| P.M YC DELAY | RF | 3 | 3 | 3 | 3 | 3 |
| S. BG YC DELAY | | 3 | 3 | 3 | 3 | 3 |
| S. DK YC DELAY | | 5 | 5 | 5 | 5 | 5 |
| S.I YC DELAY | | 5 | 7 | 7 | 7 | 7 |
| N.M YC DELAY | | 7 | 3 | 3 | 3 | 3 |
| P. YC DELAY | VIDEO | 4 | 4 | 4 | 4 | 4 |
| S. YC DELAY | | 1 | 1 | 1 | 1 | 1 |
| N. YC DELAY | MODE | 4 | 4 | 4 | 4 | 4 |

| VIDEO ADJUST1 | RANGE | INITIAL DATA | | | | |
|---|---|---|---|---|---|---|
| | | SDI 21"1.7R | SDI 25" 1.3R | SDI 25" FLAT | SDI 29" 1.3R | SDI 30" |
| | | A51KQJ63X01 | A59KPR84X01 | A59QDF891X002 | A68QBT891X002<br>A68KVL74X01 | A70QBZ791X001 |
| RED CUTOFF | 0~255 | 127 | 127 | 127 | 127 | 127 |
| GREEN CUTOFF | 0~255 | 127 | 127 | 127 | 127 | 127(FIX) |
| BLUE CUTOFF | 0~255 | 127 | 127 | 127 | 127 | 127 |
| RED DRIVE | 0~255 | 127 | 127 | 127 | 127 | 127 |
| GREEN DRIVE | 0~255 | 127 | 127 | 127 | 127 | 127(FIX) |
| BLUE DRIVE | 0~255 | 127 | 127 | 127 | 127 | 127 |
| SUB BRIGHT | 0~200 | 100 | 100 | 110 | 100 | 100 |
| SUB CONTRAST | 0~63 | 52 | 52 | 52 | 52 | 52 |
| SUB COLOR | 0~27 | 27 | 27 | 27 | 27 | 27 |

| VIDEO ADJUST1 | RANGE | INITIAL DATA | | | | |
|---|---|---|---|---|---|---|
| | | SDI 21"1.7R | SDI 25" 1.3R | SDI 25" FLAT | SDI 29" 1.3R | SDI 30" |
| | | A51KQJ63X01 | A59KPR84X01 | A59QDF891X002 | A68QBT891X002<br>A68KVL74X01 | A70QBZ791X001 |
| SUB TINT | 0~100 | 30 | 30 | 30 | 30 | 30 |
| BCL THRESHOLD | 0~255 | 40 | 60 | 67 | 67 | 64 |
| BCL GAIN | 0~15 | 8 | 9 | 9 | 8 | 9 |
| BCL TIME | 0~15 | 13 | 7 | 13 | 13 | 7 |
| TTX CONTRAST | 0~255 | 90 | 70 | 90 | 90 | 70 |
| P. BG YC DELAY | RF | 3 | 3 | 3 | 3 | 3 |
| P. DK YC DELAY | | 6 | 6 | 6 | 6 | 6 |
| P.I YC DELAY | | 6 | 6 | 6 | 6 | 6 |
| P.M YC DELAY | | 3 | 3 | 3 | 3 | 3 |
| S. BG YC DELAY | | 3 | 3 | 3 | 3 | 3 |
| S. DK YC DELAY | | 5 | 5 | 5 | 5 | 5 |
| S.I YC DELAY | | 7 | 7 | 7 | 7 | 7 |
| N.M YC DELAY | | 3 | 3 | 3 | 3 | 3 |
| P. YC DELAY | VIDEO | 4 | 4 | 4 | 4 | 4 |
| S. YC DELAY | | 1 | 1 | 1 | 1 | 1 |
| N. YC DELAY | MODE | 4 | 4 | 4 | 4 | 4 |

| VIDEO ADJUST 1 | RANGE | FUNCTION |
|---|---|---|
| RED CUTOFF | 0~255 | Adjusts the gain red output of low light. |
| GREEN CUTOFF | 0~255 | Adjusts the gain green output of low light. Fix this agin to 127. |
| BLUE CUTOFF | 0~255 | Adjusts the gain blue output of low light. |
| RED DRIVE | 0~255 | Adjusts the red blue output of high light. |
| GREEN DRIVE | 0~255 | Adjusts the green output of high light. After "G2-Adjustment" and White Balance adjustments are complete, this data is fixed |
| BLUE DRIVE | 0~255 | Adjusts the gain blue output of high light. |
| SUB BRIGHT | 0~200 | Adjust sub brightness level to set the low luminance in Picture Standard mode. |
| SUB CONTRAST | 0~63 | Adjusts sub contrast level to set the high luminance in Pitture Standard mode.<br>Set the value of sub contrast to near 50. The user control " contrast" depends on this value.<br>User contrast=[sub cont x 2/100] If sub contrast data is 10, user contrast changes into 1/5 step |
| SUB COLOR | 0~27 | Adjusts sub color level to set the gain for color in Picture Standard mode. |
| SUB TINT | 0~100 | Adjusts the sub tint level of NTSC color system. |
| BCL THRESHOLD | 0~255 | Short for Beam Current Limit Threshold. Adjusts the current of CRT long term. |
| BCL GAIN | 0~15 | Beam current limit gain |
| BCL TIME | 0~15 | Adjusts BCL Time constant. Beam current limit actual time |
| TTX CONTRAST | 0~255 | Adjusts contrast on TTX picture. |
| YC DELAY | 0~8 | Compensates the time gap between color and luminance boundaries and cotrolls data difference by system(See table above) |

**Note 1. Beam Control Limit Characteristic**

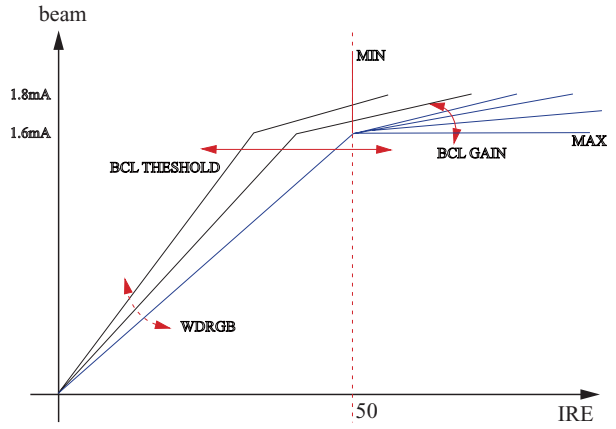
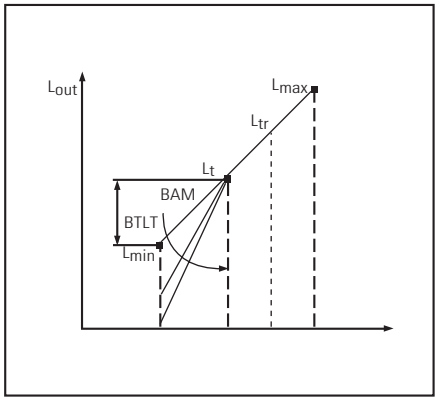



**Table 3. YC Delay Adjustment Table**

| YC Delay | PAL | | | | SECAM | | | | NTSC | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Def. | BG | DK | I | Def. | BG | DK | I | Def. | M |
| Value | 4 | 3 | 6 | 6 | 1 | 3 | 5 | 7 | 4 | 0 |

## 4-8-2(E) VIDEO 2 ADJUST

| OSD | RANGE | INITIAL VALUE | FUNCTION | REMARKS |
|---|---|---|---|---|
| B STRETCH-BTHR | 0 ~ 55 | 50 | Black stretch threshold | |
| B STRETCH-BTLT | 0 ~ 15 | 8 | Black stretch tilt position | |
| B STRETCH-BAM | 0 ~ 31 | 4 | Black stretch amount | |
| CORING | 0 ~ 31 | 31 | Luminance peaking filter coring | DIGITAL NR OFF VALUE |
| RGB BRIGHT | 0 ~ 255 | 45 | External RGB brightness | SCARTS MODEL ONLY |
| RGB CONTRAST | 0 ~ 80 | 0 | External RGB contrast | SCARTS MODEL ONLY |
| EHT TIME | 0 ~ 15 | 3112B:0<br>3130Y:3 | Electronics high tension time<br>EHT vertical correction time(according to beam change) | VDP3130Y NO USED '0' |
| EHT VERTICAL | 0 ~ 255 | 60 | EHT compensation coefficent vertical | |



4-8-2(F) VIDEO 3 ADJUST

ADD ITEM

| OSD | RANGE | INITIAL VALUE | FUNCTION | REMARKS |
|---|---|---|---|---|
| PEAK THRESHOLD | 0~255 | 255 | White peak level threshold | Design factor |
| SOFT LIMIT SLOPE B | 0~15 | 4 | Refer to picture below | Design factor |
| HARD LIMIT | 0~255 | 255 | | |
| PEAK VIDEO REF | 0~4 | 0 | White peak levelthrehold reference | Design factor |
| PEAK VIDEO GAIN | 0~5 | 0 | White peak level threshild gain | Design factor |
| ACC-REF(PAL/NTSC) | 0~40 | 33 | Auto color control gain(PAL/NTSC) | Picture standard color gain setting |
| ACCR(SECAM) | 0~39 | 21 | Auto color control gain(SECAM) | Picture standard color gain setting |
| Gain1(video | 0~31 | 11 | Velocity video gain | Not used(design factor) |
| Delay1(video) | 0~15 | 3 | Velocity video delay | Not used(design factor) |
| Velocity Limt | 0~127 | 74 | Velocity limit | Not used(design factor) |
| Velocity Delay | 0~15 | 7 | Velocity delay | Not used(design factor) |
| Velocity Coring | 0~15 | 10 | Velocity frequency coring | Not used(design factor) |
| RGB SHIFT | 0~255 | 109 | Adjust RGB input signal Horizontal position | Used to scarts model only.<br>VDP3130Y:Not used |
| HB START | 0~255 | 117 | Horizontal blainking start | Picture right edge position SAG<br>or cut problem countermeasure |
| HB STOP | 0~255 | 168 | Horizontal blainking stop | Picture left edge position SAG<br>or cut problem countermeasure |
| 2H Comb Filter | 0~1 | 1 | Comb filter on/off ( 0 : Comb fillter off<br>1 : Comb filtter on )<br>VDP3108:No comb filter, VDP3112B/<br>VDP3130Y/VDP3120B:Comb Filter<br>function present | OFF(0):Cross color and Dot crawl<br>phenomenons happen. Detailed<br>characteristics are a little good.<br>ON(1): Cross color and Dot crawl<br>characteristics are good, but Detaile<br>characteristics aren't |
| NR OFF Value | 0~10 | 0 | Adjust Digital NR off value | Picture standard mode detail |
| Color Hys(SECAM) | 0~255 | 166 | Color killing hysteresys(SECAM) | 0 ~ 155 Not used(SECAM NO COLOR) |
| Color Hys(PAL) | 0~255 | 200 | Color killing hysteresys(PAL) | |

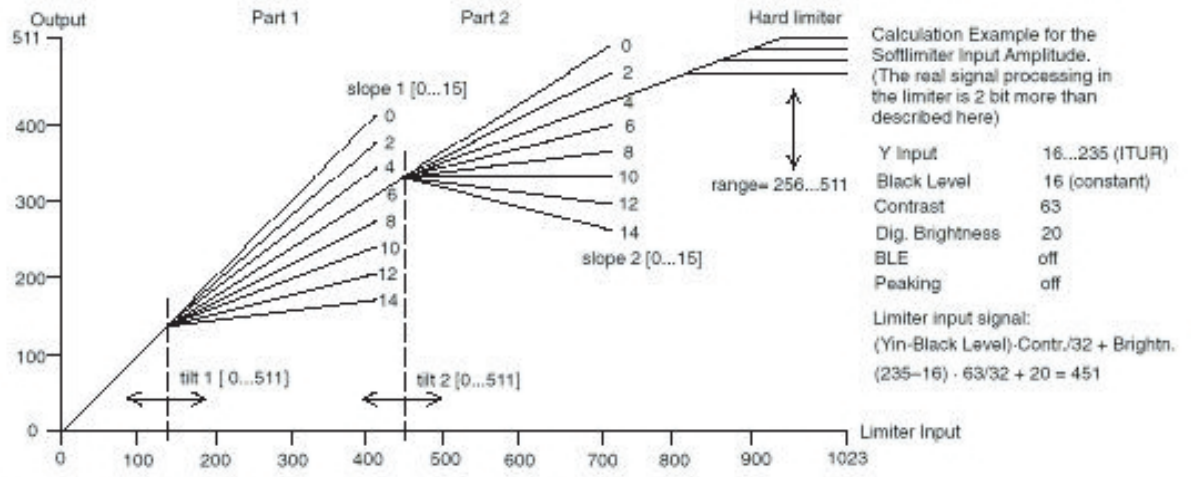



**Fig. 2–17:** Characteristic of soft limiter a and b and hard limiter

4-8-2(G) OPTION 1

**Micom Spec : SIM-806EA**

| No. | ITEM(OSD) | Control | Description |
|---|---|---|---|
| **1** | Language | ESAsia | ENGLISH/VIETNAM/THAI/INDONESIA/MALAYSIA |
| **2** | Sound | A2/NICAM | A2 Stereo / Nicam Stereo Model |
| | | Virtual Dolby | Virtual Dolby Model |
| | | Mono | Mono Model |
| | | Line-Stereo | Line stereo Model |
| **3** | CRT | 4:3 | Normal / Zoom / 16:9 |
| | | Wide | Wide CRT ( 16:9 ) |
| | | Q(12.8:9) | Plus / Normal / Zoom / 16:9 |
| | | 4:3-16:9 | Normal / Zoom |
| | | Q - 16:9 | Plus / Normal / Zoom |
| **4** | AV Mode | 1Scart | Built in 1 Scart Model |
| | | 2Scart | Built in 2 Scart Model |
| | | 2scart+S | Built in 2 Scart +SVHS JACK Model |
| | | 1RCA | Built in RCA 6P / RCA 4P Model |
| | | 2RCA | Built in RCA 9P Model |
| | | 2RCA+S | Built in RCA 9P + SVHS JACK Model |
| | | 2RCA+D | Built in RCA 9P + DVD JACK Model |
| | | 2RCA+S+D | Built in RCA 9P + SVHS JACK Model +DVD JACK Model |
| **5** | x-ray | On | X-ray detection function on |
| | | Off | X-ray detection function off |
| **6** | Tilt Control | On | CRT Tilt control function on ( wide / 29PF CRT) |
| | | Off | CRT Tilt control function off |
| **7** | Auto FM | On | automatic change from NICAM to FM depends on NICAM error rate |
| | | Off | automatic change from NICAM to FM depends on NICAM syncronization |
| **8** | PIP | Off | no PIP function |
| | | 1 - tuner | 1 Tuner PIP function |
| | | 2 - tuner | 2 Tuner PIP function |
| **9** | Txt Language | West Europe | English/German/Skandinavian/Italian<br>French/Spainsh/Czech |
| | | East Europe | Polish/Czech/Rumanian/Slovenian/Croatian/<br>French/Skandinavian/German/Italian |
| | | Russian | Russian/Ukranian/Estonian/Czech/German/<br>Lettish/English |
| | | Greek-Turkey | English/Turkey/Greek/French/Skandinavian/German/Spainsh/Italian |
| | | Arabic | English/Arabic/French |
| | | Farsi | English/Farsi/French |
| | | Arab-Hebrew | Arabic/Hebrew |
| **10** | LNA | On | Built in LNA Tuner |
| | | Off | Built in Normal Tuner |
| **11** | Equalizer | On | Include in Equalizer function ( MSP34X0D) |
| | | Off | Without Equalizer function (MSP34X5D) |
| **12** | High deviate | On | High deviation mode on MSP34XX |
| | | Off | Normal mode on MSP34XX |
| **13** | TTX On/OFF | On | TTX Model |
| | | Off | W/O-TTX Model |
| **14** | AV by CH Key | On | Without Video Pannel Key |
| | | Off | With Video Pannel Key |

4-8-2(H) OPTION 2

**Micom Spec : SIM-806MA**

| No. | ITEM(OSD) | Control | Description |
|---|---|---|---|
| **1** | Language | Arab | English/Arab/French/Pakistan |
| | | Iran | English/Persian/French/Turkey |
| | | Libya | English/Libya/French |
| | | CIS | English/Russia |
| **2** | Sound | A2/NICAM | A2 Stereo / Nicam Stereo Model |
| | | Virtual Dolby | Virtual Dolby Model |
| | | Mono | Mono Model |
| | | Line-Stereo | Line stereo Model |
| **3** | CRT | 4:3 | Normal / Zoom / 16:9 |
| | | Wide | Wide CRT ( 16:9 ) |
| | | Q(12.8:9) | Plus / Normal / Zoom / 16:9 |
| | | 4:3-16:9 | Normal / Zoom |
| | | Q - 16:9 | Plus / Normal / Zoom |
| **4** | AV Mode | 1Scart | Built in 1 Scart Model |
| | | 2Scart | Built in 2 Scart Model |
| | | 2scart+S | Built in 2 Scart +SVHS JACK Model |
| | | 1RCA | Built in RCA 6P / RCA 4P Model |
| | | 2RCA | Built in RCA 9P Model |
| | | 2RCA+S | Built in RCA 9P + SVHS JACK Model |
| | | 2RCA+D | Built in RCA 9P + DVD JACK Model |
| | | 2RCA+S+D | Built in RCA 9P + SVHS JACK Model + DVD JACK Model |
| **5** | x-ray | On | X-ray detection function on |
| | | Off | X-ray detection function off |
| **6** | Tilt Control | On | CRT Tilt control function on ( wide / 29PF CRT) |
| | | Off | CRT Tilt control function off |
| **7** | Auto FM | On | automatic change from NICAM to FM depends on NICAM error rate |
| | | Off | automatic change from NICAM to FM depends on NICAM syncronization |
| **8** | PIP | Off | no PIP function |
| | | 1- tuner | 1 Tuner PIP function |
| | | 2 - tuner | 2 Tuner PIP function |
| **9** | Txt Language | West Europe | English/German/Skandinavian/Italian/French/Spainsh/Czech |
| | | East Europe | Polish/Czech/Rumanian/Slovenian/Croatian/ French/Skandinavian/German/Italian |
| | | TRussian | Russian/Ukranian/Estonian/Czech/German/Lettish/English |
| | | Greek-Turkey | English/Turkey/Greek/French/Skandinavian/German/Spainsh/Italian |
| | | Arabic | English/Arabic/French |
| | | Farsi | English/Farsi/French |
| | | Arab-Hebrew | Arabic/Hebrew |
| **10** | LNA | On | Built in LNA Tuner |
| | | Off | Built in Normal Tuner |
| **11** | Equalizer | On | Include in Equalizer function ( MSP34X0D) |
| | | Off | Without Equalizer function (MSP34X5D) |
| **12** | High deviate | On | High deviation mode on MSP34XX |
| | | Off | Normal mode on MSP34XX |
| **13** | TTX On/OFF | On | TTX Model |
| | | Off | W/O-TTX Model |
| **14** | AV by CH Key | On | Without Video Pannel Key |
| | | Off | With Video Pannel Key |

4-8-2(I) OPTION 3

**Micom Spec : SIM-806EI/SIM-806C**

| No. | ITEM(OSD) | Control | Description |
|---|---|---|---|
| **1** | SOUND | A2/NICAM | A2 Stereo / Nicam Stereo Model |
| | | Virtual Dolby | Virtual Dolby Model |
| | | Mono | Mono Model |
| | | Line-Stereo | Line stereo Model |
| **2** | CRT | 4:3 | Normal / Zoom / 16:9 |
| | | Wide | Wide CRT ( 16:9 ) |
| | | Q(12.8:9) | Plus / Normal / Zoom / 16:9 |
| | | 4:3-16:9 | Normal / Zoom |
| | | Q - 16:9 | Plus / Normal / Zoom |
| **3** | A/V Mode | 1Scart | Built in 1 Scart Model |
| | | 2Scart | Built in 2 Scart Model |
| | | 2scart+S | Built in 2 Scart +SVHS JACK Model |
| | | 1RCA | Built in RCA 6P / RCA 4P Model |
| | | 2RCA | Built in RCA 9P Model |
| | | 2RCA+S | Built in RCA 9P + SVHS JACK Model |
| | | 2RCA+D | Built in RCA 9P + DVD JACK Model |
| | | 2RCA+S+D | Built in RCA 9P + SVHS JACK Model + DVD JACK Model |
| **4** | x-ray | On | X-ray detection function on |
| | | Off | X-ray detection function off |
| **5** | Tilt Control | On | CRT Tilt control function on ( wide / 29PF CRT) |
| | | Off | CRT Tilt control function off |
| **6** | Auto FM | On | automatic change from NICAM to FM depends on NICAM error rate |
| | | Off | automatic change from NICAM to FM depends on NICAM syncronization |
| **7** | PIP | Off | no PIP function |
| | | 1 - tuner | 1 Tuner PIP function |
| | | 2 - tuner | 2 Tuner PIP function |
| **8** | LNA | On | Built in LNA Tuner |
| | | Off | Built in Normal Tuner |
| **9** | Equalizer | On | Include in Equalizer function ( MSP34X0D) |
| | | Off | Without Equalizer function (MSP34X5D) |
| **10** | High deviate | On | High deviation mode on MSP34XX |
| | | Off | Normal mode on MSP34XX |
| **11** | AKB | On | AKB Function On |
| | | Off | AKB Function Off |
| **12** | AV by CH Key | On | Without Video Pannel Key |
| | | Off | With Video Pannel Key |
| **13** | Woofer | On | Woofer Function ON |
| | | Off | Woofer Function OFF |

**India only**

4-8-2(J) G2 - ADJUSTMENT

❑ **When using RGB AMP STV-5109**

| G2 ADJUST | RANGE | CRT | | | | |
|---|---|---|---|---|---|---|
| | | TSB 21-FLAT | LG-CPT 21-FLAT | SDI 21" FALT | SDI 14" | SDI 15" FLAT |
| | | A51LSH196X03(+380)<br>A51LSH198X03(-250) | A51QDJ279X14 | A51QDX991X001 | A34KQV42X | A36QDT351X |
| MRC R G B | NO CONTROL | 110 | 110 | 110 | 110 | 110 |
| MRWDG | NO CONTROL | 110 | 110 | 110 | 110 | 110 |
| IBRM | 0~255 | 225 | 225 | 220 | 205 | 215 |
| WDRV | 0~255 | 45 | 45 | 35 | 45 | 45 |
| CDL | 0~255 | 185 | 175 | 200 | 100 | 160 |
| COL R G B | 0~255 | 75 | 165 | 145 | 100 | 80 |
| COL G | 0~255 | 75 | 165 | 145 | 100 | 80 |
| COL B | 0~255 | 75 | 165 | 145 | 100 | 80 |

| G2 ADJUST | RANGE | CRT | | | | |
|---|---|---|---|---|---|---|
| | | SDI 21" 1.7R | SDI 25" 1.3R | SDI 25" FLAT | SDI 29" 1.3R | SDI 30" |
| | | A51KQJ63X01 | A59KPR84X01 | A59QDF891X002 | A68QBT891X002<br>A68KVL74X01 | A70QBZ791X001 |
| MRC R G B | NO CONTROL | 110 | 110 | 110 | 110 | 110 |
| MRWDG | NO CONTROL | 110 | 110 | 110 | 110 | 110 |
| IBRM | 0~255 | 215 | 210 | 205 | 200 | 200 |
| WDRV | 0~255 | 45 | 35 | 45 | 45 | 45 |
| CDL | 0~255 | 160 | 220 | 150 | 190 | 180 |
| COL R G B | 0~255 | 80 | 130 | 140 | 150 | 130 |
| COL G | 0~255 | 80 | 130 | 140 | 150 | 130 |
| COL B | 0~255 | 80 | 130 | 140 | 150 | 130 |

❑ **When using RGB AMP TDA6101Q**

| G2 ADJUST | RANGE | CRT | | | | |
|---|---|---|---|---|---|---|
| | | TSB 21-FLAT | LG-CPT 21-FLAT | SDI 21" FALT | SDI 14" | SDI 15" FLAT |
| | | A51LSH196X03(+380)<br>A51LSH198X03(-250) | A51QDJ279X14 | A51QDX991X001 | A34KQV42X | A36QDT351X |
| MRC R G B | 0~255 | 110 | 110 | 110 | 110 | 110 |
| MRWDG | 0~255 | 110 | 110 | 110 | 110 | 110 |
| IBRM | 0~255 | 220 | 230 | 220 | 180 | 220 |
| WDRV | 0~255 | 35 | 35 | 35 | 35 | 35 |
| CDL | 0~255 | 230 | 230 | 230 | 100 | 200 |
| COL R G B | 0~255 | 65 | 65 | 65 | 100 | 150 |
| COL G | 0~255 | 65 | 65 | 65 | 100 | 150 |
| COL B | 0~255 | 65 | 65 | 65 | 100 | 150 |

| G2 ADJUST | RANGE | CRT | | | | |
|---|---|---|---|---|---|---|
| | | SDI 21" 1.7R | SDI 25" 1.3R | SDI 25" FLAT | SDI 29" 1.3R | SDI 30" |
| | | A51KQJ63X01 | A59KPR84X01 | A59QDF891X002 | A68QBT891X002<br>A68KVL74X01 | A70QBZ791X001 |
| MRC R G B | NO CONTROL | 110 | 110 | 110 | 110 | 110 |
| MRWDG | NO CONTROL | 110 | 110 | 110 | 110 | 110 |
| IBRM | 0~255 | 220 | 220 | 210 | 220 | 210 |
| WDRV | 0~255 | 35 | 35 | 35 | 35 | 35 |
| CDL | 0~255 | 230 | 230 | 150 | 180 | 160 |
| COL R G B | 0~255 | 65 | 65 | 150 | 65 | 130 |
| COL G | 0~255 | 65 | 65 | 150 | 65 | 130 |
| COL B | 0~255 | 65 | 65 | 150 | 65 | 130 |

| G2-ADJUST | RANGE | DESCRIPTION |
|---|---|---|
| MRC R G B | 0~255 | Measure of Cutoff Gain, the data comes when adjusting the screen voltage. It is set to the point where changing red into green. RGB Output. By sending the standard pulse data, it receives feedback from RGB drive. It is low light data. |
| MRWDG | 0~255 | Measure of Green of Drive Gain, the data that indicates the value of High Light. It has the same principle as MRC R G B |
| IBRM | 0~255 | Internal brightness measurement. For AKB, an 1-chip sends RGB standard pulse and sets the level of the standard pulse. |
| WDRV | 0~255 | White drive measure control. IBRM is the standard pulse of low light. WDRV is the standard pulse of high light. |
| CDL | 0~255 | Cathode drive level. Sets the standard luminance of high light different by CRT and inch.<br>This uses the same register as the RED//GREEN/BLUE drive in video adjust-1. |
| COL R G B<br>COL G<br>COL B | 0~255 | Cutoff level R. Uses the same register as the RED cutoff in Video adjust-1.<br>Cutoff level G. Uses the same register as the GREEN cutoff in Video adjust-1.<br>Cutoff level B. Uses the same register as the BLUE cutoff in Video adjus |

4-8-2(K) OTHERS

| OTHERS | RANGE | Application CRT | | | | |
|---|---|---|---|---|---|---|
| | | TSB CPT 21-FLAT | LG-CPT 21-FLAT | SDI 21" FALT | SDI 15" FLAT | SDI 21" 1.7R |
| | | A51LSH196X03(+380)<br>A51LSH198X03(-250) | A51QDJ279X14 | A51QDX991X001 | A36QDT351X | A51KQJ63X01 |
| VSU (VDP3130Y) | 96~111 | 100 | 100 | 100 | 100 | 98 |
| (VDP3112B) | | 100 | 110 | 108 | 110 | 108 |
| H QEW | -30~30 | 0 | 0 | 0 | 0 | 0 |
| H ZOOM Parabola | -30~30 | 8 | 8 | 25 | 8 | 8 |
| H 16:9 Parabola | -30~30 | -10 | -18 | -30 | -18 | -10 |
| TTX H Shift | -30~30 | 0 | 0 | 0 | 0 | 0 |
| Mono Sound System | BG | BG | BG | BG | BG | BG |
| V Slice Level | 0~3 | 2 | 2 | 2 | 2 | 2 |
| Melody Volume | 0~20 | 5 | 5 | 5 | 5 | 5 |
| AKB | ON/OFF | ON | ON | ON | ON | ON |
| TTX LIST PRIOR | ON/OFF | OFF | | | | |

| OTHERS | RANGE | Application CRT | | | |
|---|---|---|---|---|---|
| | | SDI 25" 1.3R | SDI 25" FLAT | SDI 29" 1.3R | SDI 30" |
| | | A59KPR84X01 | A59QDF891X002 | A68QBT891X002<br>A68KVL74X01 | A70QBZ791X001 |
| VSU (VDP3130Y) | 96~111 | 98 | 100 | 98 | 110 |
| (VDP3112B) | | 108 | 100 | 108 | 110 |
| H QEW | -30~30 | 0 | 0 | 0 | -7 |
| H ZOOM Parabola | -30~30 | 0 | -12 | 0 | -10 |
| H 16:9 Parabola | -30~30 | 0 | 0 | -10 | 0 |
| TTX H Shift | -30~30 | 0 | 0 | 0 | 0 |
| Mono Sound System | BG | BG | BG | BG | BG |
| V Slice Level | 0~3 | 2 | 2 | 2 | 2 |
| Melody Volume | 0~20 | 5 | 5 | 5 | 5 |
| AKB | ON/OFF | OFF | ON | OFF | OFF |
| TTX LIST PRIOR | ON/OFF | | | | |

| OTHERS | RANGE | DESCRIPTION |
|---|---|---|
| VSU | 96~111 | Vertical Setup Time. Delays the vertical sync to solve the jitter of OSD and TTX . |
| | | Check OSD while varying 96 111 step by step and an 1H line moves at two points. |
| | | If the value is set at the first point or second point, an OSD jitter may happen. Also, if the value is set between the first and second points, a TTX jitter may happen. So, the value of VSU should be set after giving some magines (three steps). |
| | | For example, OSD moves as much as 1H-line when changing data 98 to 99 and 106 to 107, respectively. |
| | | At this time, VSU should be set to 110 by allowing for the margin of three steps (If the value within 99 to 106 is set, a jitter may happens in TTX mode.) |
| H QEW | -30~30 | Short for Q-CRT HORIZNOTAL EAST WEST, data used only for Q-CRT MODEL. In NORMAL mode, the horizontal picture size is within 5 5.5. |
| | | In Q mode, the horizontal picture size is within 6.5 7. This H QEW function sets the gap between horizontal picture size in NORMAL mode and horizontal picture size in Q mode. |
| H ZOOM Parabola | -30~30 | Corrects the vertical linearity in Zoom mode of P-SIZE. The data differs according to CRT (see data above) |
| H 16:9 Parabola | -30~30 | Corrects the vertical linearity in 16:9 mode of P-SIZE. The data differs according to CRT (see data above). |
| TTX H Shift | -30~30 | Horizontal blanking pulse duty determines the position of TTX and FBT determines horizontal blanking pulse duty. |
| | | Because FBT depends on model, this TTX H Shift allows the micom to set the start position of pixel to prevent the TTX screen from being shifted. |
| Mono Sound System | BG | Not Used |
| V Slice Level | 0~3 | Allows the sync slice level of sync separate block to be changed. This item corresponds the case |
| | | where a vertical bouncing happens according to signal conditions by area |
| | | (overmodulation, especially). 0: 100% 1: 90% 2: 75% 3: 60% |
| Melody Volume | 0~20 | Sets the level of melody volume in Picture ON. Differently controlled according to buyer and area. |
| AKB | ON/OFF | Short for Auto Kined Bias, a function that maintains uniformity in brightness and white balance by |
| | | automatically correcting the variance of brightness and white balance according to temperature |
| | | and characteristics of AMP in the CRT drive. It is designed to be turned ON/OFF so that the AKB |
| | | line can't be seen at top when a DY of lower deflection sensitivity is used |
| TTX LIST PRIORITY | ON/OFF | TTX mode has two different types; List and FLOF. When swtiching into the TTX mode, this function |
| | | determines which type has priorty. |

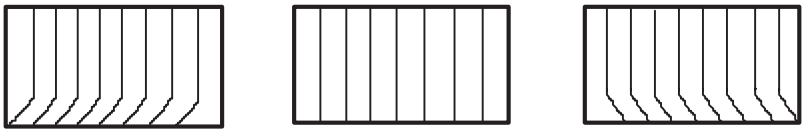
**Table 5.**

| VDP Version | | Remark |
|---|---|---|
| OSD | Description | |
| B | Chroma IC is VDP3108B/VDP3112B/VDP3120B | Normal Version IC |
| Y | Chroma IC is VDP3130Y/VDP3130Y-B2 | DVD Version IC |

**Table 6.**

| NO | Y-ADD | | | |
|---|---|---|---|---|
| | ITEM(OSD) | RANGE | INITIAL VALUE | FUNCTION |
| 1 | H BOW | -128~127 | 0 | Horizontal bow control: Actually doesn't operate (see figure blow) |
| 2 | H ANGLE | -128~127 | 0 | Horizontal angle control: Actually doesn't operate (see figure below) |
| 3 | H DSCC | 1~7 | 2 | Discharge sample counter for deflection retrace |
| 4 | DVD TINT CONTROL | 0~1 | 1 | Determines the presence of use of DVD SUB TINT control. When VDP3130Y B1 is used, it is set to1 and When VDP3130Y B2 is used, it is set to 0. |
| 5 | DVD SUB TINT | 0~100 | 25 | After the NTSC DVD signal is input, this function set a proper phase in Picture Standard mode. Initial Value = 25 |
| 6 | EHT OFFSET | 0~535 | 0 | EHT Compensation east/west offset coefficent (Not used) |
| 7 | EHT HORIZONTAL | -128~127 | 0 | EHT Compensation east/west gain coefficent (Not used) |
| 8 | VDPY B2-VERSION | ON/OFF | ON | Switches VDP3130Y IC version On/Off. When VDP3130Y B2-version is used, it is set ON. When B1-version is used, it is set OFF. |

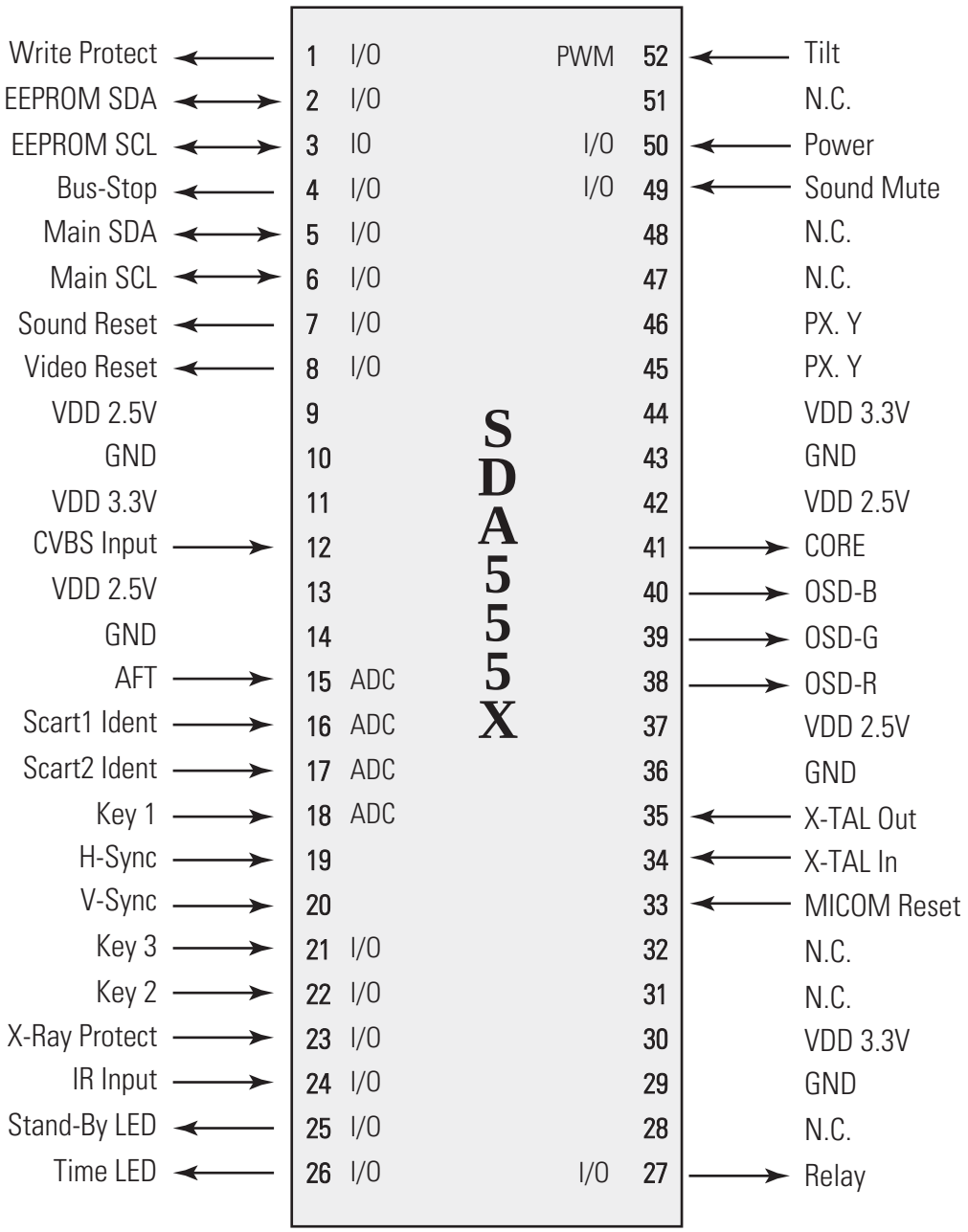
① H-BOW



② H-ANGLE

# 4-9 MICOM

## 4-9-1 Pin Layout



## 4-9-2 Pin Assignment Specification

| PIN NO | FUNCTION | ASSIGN | IN/OUT | ACTIVE H/L | DESCRIPTION |
|---|---|---|---|---|---|
| **1** | I/O | Write Protect | Out | Low | EEPROM Write Protection |
| **2** | I/O | ROM SDA | I/O | | EEPROM Serial Data Line |
| **3** | I/O | ROM SCL | I/O | | EEPROM Serial Clock Line |
| **4** | I/O | Bus Stop | In | Low | Disable Micom IIC |
| **5** | I/O | Main SDA | I/O | | Peripheral IC Serial Data Line |
| **6** | I/O | Main SCL | I/O | Low | Peripheral IC Serial Clock Line |
| **7** | I/O | Sound Reset | Out | Low | MSP IC Initial Control |
| **8** | I/O | Video Reset | Out | | VDP IC Initial Control |
| **9** | Vdd | VDD 2.5V | | | |
| **10** | GND | | | | |
| **11** | Vdd | VDD 3.3V | | | |
| **12** | CVBS | CVBS Input | In | | TTX CVBS Input |
| **13** | Vdd | VDD 2.5V | | | Analog B+ |
| **14** | GND | | | | Analog Ground |
| **15** | ADC | AFT | In | | Auto Fine Tuning Control |
| **16** | ADC | SC1-ID | In | | Scart1 Ident |
| **17** | ADC | SC2-ID | In | | Scart2 Ident |
| **18** | ADC | Key1 | In | | Key1 Input |
| **19** | HS | H-Sync | In | | Horizontal Sync Input |
| **20** | VS | V-Sync | In | | Vertical Sync Input |
| **21** | I/O | Key3 | In | | Key3 Input |
| **22** | I/O | Key2 | In | | Key2 Input |
| **23** | I/O | X-Ray | In | | X-Ray Protection |
| **24** | I/O | IR-In | In | | Remocon Signal Input |
| **25** | I/O | STD-LED | Out | | LED Drive Output(Red) |
| **26** | I/O | TIM-LED | Out | | LED Drive Output(Green) |

## 4-9-2 Pin Assignment Specification (Continued)

| PIN NO | FUNCTION | ASSIGN | IN/OUT | ACTIVE H/L | DESCRIPTION |
|---|---|---|---|---|---|
| **27** | I/O | Relay | Out | Low | Activate Degaussssing Coil |
| **28** | N.C. | | | | Not Used (Programmed Gound Level) |
| **29** | GND | | | | Analog Ground |
| **30** | Vdd | VDD 3.3V | | | Not Used (Programmed Gound Level) |
| **31** | N.C. | | | | Not Used (Programmed Gound Level) |
| **32** | N.C. | | | | Micom Hardware Reset |
| **33** | Reset | Reset | In | Low | Crystal Oscillation Input |
| **34** | X-In | X-TAL In | In | 6MHz | Crystal Oscillation Output |
| **35** | X-Out | X-TAL Out | Out | 6MHz | Analog Ground |
| **36** | GND | | | | Analog B+ |
| **37** | Vdd | VDD 2.5V | | | OSD/TTX Output (Red) |
| **38** | R | OSD-R | Out | | OSD/TTX Output (Green) |
| **39** | G | OSD-G | Out | | OSD/TTX Output (Blue) |
| **40** | B | OSD-B | Out | | Fast Blank/Half Contrast Output |
| **41** | COR | CORE | Out | | |
| **42** | Vdd | VDD 2.5V | | | |
| **43** | GND | | | | |
| **44** | Vdd | VDD 3.3V | | | |
| **45** | I/O | PX.Y | In | | When The Caption Function Adopted, Used. |
| **46** | I/O | PX.Y | Out | | |
| **47** | N.C. | | | | Not Used (Programmed Gound Level) |
| **48** | N.C. | | | | |
| **49** | I/O | S-Mute | Out | High | Sound Amp Mute |
| **50** | I/O | Power | Out | Low | Picture On/Off Control |
| **51** | N.C. | | | | Not Used (Programmed Gound Level) |
| **52** | I/O | | | | |